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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/980,027	02/27/2002	Dominique Morche	15675p382	3019

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EXAMINER

LE, LANA N

ART UNIT	PAPER NUMBER
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2685

DATE MAILED: 12/17/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/980,027

Applicant(s)

MORCHE, DOMINIQUE

Examiner

Lana N Le

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 10 is/are rejected.
- 7) ☒ Claim(s) 3-9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 6.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. Claims 1-2 and 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Since claim 1 does not set forth all the steps involved in the method/process, i.e. see claim 1, line it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without citing all active, positive steps delimiting how this use is actually practiced.

Regarding claim 2, lines 11-12, after "mixing signals", the phrase "in such a manner" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d). Appropriate correction is required.

Regarding claim 10, "via at least one frequency transposition means" is indefinite in that the mixer is between the oscillator and the phase shifters where the oscillator is actually between the mixer and the oscillator.

Regarding claim 1, lines 27-28, it recites the limitation "each of said first and second signals". There is insufficient antecedent basis for this limitation in the claim.

Claim Objections

2. Claim 2 is objected to because of the following informalities:

-claim 2, after "upstream mixers", the "," should be deleted since "two respective downstream mixing signals" are delivered as part of the transposition means.

-claim 2, lines 13-14, before "transposition", "the" should be added.

-claim 2, line 18, after "mixing signals,", "and in that" is not appropriate claim language, it should be deleted or changed to "characterized in that"

3. Claims 5-10 are objected to under 37 CFR 1.75(c) as being in improper form because they depend on a multiple dependent claim 4. See MPEP § 608.01(n). Accordingly, the claims 5-10 have not been further treated on the merits.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-2 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heck (US 4,653,117) in view of Morche et al (A High Q 200 MHz Low Power Fully Integrated Bandpass IF Filter; IEEE Custom Integrated Circuits, May 14, 1998).

Regarding claim 1, Heck discloses a bandpass filter method in which two frequency transposition are performed in parallel at (32A, 32B, 34A, 34B) on an input signal for filtering using respective first and second upstream mixing signals that are substantially in phase quadrature so as to obtain respective first and second transposed signals (output signals at 32A, 32B, 34A, 34B),

and the two transposed signals are filtered respectively by two lowpass filters (33A, 33B), the frequency of the transposition signals and the passband of the low pass filters being related to the frequency of the input signal and to the passband desired for the bandpass filter (by wave shaping the output of mixers 32A, 32B which receives the input signal and downconvert the input signal) so that the low pass filter will filter the downconverted signal at a passband capable of outputting a wanted signal within the needed frequency range;

and transposition means (32A, 32B, 34A, 34B) delivering two respective upstream mixing signals (output of 32A, output of 32B) which are substantially in phase quadrature to the upstream mixers and two respective downstream mixing signals (output of 34A, output of 34B) which are substantially in phase quadrature the device further comprising an adder (39) or a subtracter connected to the output from the downstream mixers,

the transposition means (32A, 32B, 34A, 34B) being provided to deliver the downstream mixing signals (output of mixers 34A, 34B) at a selected frequency different from the frequency of the upstream mixing signals (due to them being further downconverted from mixers 32A and 32B) in such a manner that the output signal 41

from the band pass filter (translating bandpass filter; fig. 2) is transposed into a desired frequency range,

the device being characterized in that it comprises a common oscillator (LO) coupled with a first phase shifter 36 for producing the upstream mixing signals (output of 32A, output of 32B) and coupled with a second phase shifter 38 for producing the downstream mixing signals (output of mixers 34A, 34B),

Heck does not disclose:

a common oscillator coupled to the first and second phase shifter. Morche et al disclose: a common oscillator (LO) coupled to the first and second phase shifter (see fig. 1). However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the two oscillators of Heck with one common oscillator in order to output two LO signals of equal magnitude from the same local signal source.

Heck and Morche et al don't disclose:

the phase shifters are connected in opposite manner so that each of the two parallel branches receives the phase advanced output signal from one of the two phase shifters and the phase delayed output signal from the other of the two phase shifters. However, shifting the phase of the phase shifters positively or negatively one way or another is well known to be where the frequency increases with the advance of the phase and the frequency decrease with the delay of the phase. It would have been obvious to one of ordinary skill in the art at the time the invention was made to another

in order to vary the frequency and select the degree of the phase shifters of Heck so that the desired phase control range can be achieved.

Regarding claim 2, Heck discloses a band-pass filter device comprising (fig. 2):
two parallel processing paths at (32A, 32B) connected between the input and the output;

each path comprising a lowpass filter cell (33A, 33B) located between an upstream mixer 32A and downstream mixer 32B;

and transposition means (32A, 32B, 34A, 34B) delivering two respective upstream mixing signals (output of 32A, output of 32B) which are substantially in phase quadrature to the upstream mixers and two respective downstream mixing signals (output of 34A, output of 34B) which are substantially in phase quadrature
the device further comprising an adder (39) or a subtracter connected to the output from the downstream mixers,

the transposition means (32A, 32B, 34A, 34B) being provided to deliver the downstream mixing signals (output of mixers 34A, 34B) at a selected frequency different from the frequency of the upstream mixing signals (due to them being further downconverted from mixers 32A and 32B) in such a manner that the output signal 41 from the band pass filter (translating bandpass filter; fig. 2) is transposed into a desired frequency range,

the device being characterized in that it comprises a common oscillator (LO) coupled with a first phase shifter 36 for producing the upstream mixing signals (output of 32A,

output of 32B) and coupled with a second phase shifter 38 for producing the downstream mixing signals (output of mixers 34A, 34B),

Heck does not disclose:

a common oscillator coupled to the first and second phase shifter. Morche et al disclose: a common oscillator (LO) coupled to the first and second phase shifter (see fig. 1). However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the two oscillators of Heck with one common oscillator in order to output two LO signals of equal magnitude from the same local signal source.

Heck and Morche et al don't disclose:

the phase shifters are connected in opposite manner so that each of the two parallel branches receives the phase advanced output signal from one of the two phase shifters and the phase delayed output signal from the other of the two phase shifters. However, shifting the phase of the phase shifters positively or negatively one way or another is well known to be single side band principle where the frequency increases with the advance of the phase and the frequency decrease with the delay of the phase. It would have been obvious to one of ordinary skill in the art at the time the invention was made to another in order to vary the frequency and select the degree of the phase shifters of Heck so that the desired phase control range can be achieved.

Regarding claim 10, Heck, Morche et al disclose the device according to claim 2, wherein Heck discloses the device is further characterized in that the at least one

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transposition means (32A, 32B, 34A, 34B) is coupled to one of the first and second phase shifters via the oscillator 40 (figs. 1 & 2).

Allowable Subject Matter

6. Claims 3-9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten to overcome the claim objections and in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim 3, Heck, Morche et al disclose a device according to claim 2, wherein Heck, Morche et al and the cited prior art fail to further disclose the device is characterized in that the ratio between the frequency of the upstream mixing signals and the frequency of the downstream mixing signals is equal to an integer ratio.

Regarding claim 4, Heck, Morche et al disclose a device according to claim 2, wherein Heck, Morche et al and the cited prior art fail to further disclose the device is characterized in that the two phase shifters are constituted by circuits each representing a cutoff frequency between their two phase shifted outputs that is equal to respectively to the frequency of the upstream mixing signals for the first phase shifter and to the frequency of the downstream mixing signals for the second phase shifter.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lana N Le whose telephone number is (703) 308-5836. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward F Urban can be reached on (703) 305-4385. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Lana Le

December 10, 2004